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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES M REUTER, DAVID W THIEL, and
RICHARD P. HELLIWELL

Appeal 2008-0249
Application 09/872,962
Technology Center 2100

Decided: July 28, 2008

Before JOSEPH L. DIXON, JAY P. LUCAS, and STEPHEN C. SIU,
Administrative Patent Judges.

DIXON, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1-16. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

BACKGROUND

Appellants' invention relates to a centralized fine-grained enhancement for distributed table driven I/O mapping. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1. A virtual storage system for mapping virtual storage segments of differing sizes to storage locations, comprising:

an agent coupled to a host, the agent having volatile memory for storing a first table, the table having entries to map the virtual storage segments to the storage locations; and

a controller coupled to the agent, the controller having non-volatile memory for storing a second table, the controller intermittently causing contents of the first table to be replaced by contents of the second table,

whereby during an input/output (I/O) operation, the host accesses one of the entries in the first table to determine one of the storage locations.

PRIOR ART

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

Kuznetsov	US 5,483,649	Jan. 9, 1996
Harish	US 5,940,850	Aug. 17, 1999

REJECTIONS

Claims 1-11 stand rejected under 35 U.S.C. § 102 as being anticipated by Harish. Claims 12-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Harish in view of Kuznetsov.

Rather than reiterate the conflicting viewpoints advanced by the Examiner and Appellants regarding the above-noted rejection, we make reference to the Examiner's Answer (mailed Jan. 26, 2007) for the reasoning in support of the rejections, and to Appellants' Brief (filed Nov. 3, 2006) and Reply Brief (filed Mar. 12, 2007) for the arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have carefully considered Appellants' Specification and claims, to the applied prior art references, and to the respective positions articulated by Appellants and the Examiner. As a consequence of our review, we make the determinations that follow.

35 U.S.C. § 102

"[A]nticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim . . ." *In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986) (citing *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458 (Fed. Cir. 1984)). "[A]bsence from the reference of any claimed element negates anticipation." *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565, 1571 (Fed. Cir. 1986).

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent

applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). The properly interpreted claim must then be compared with the prior art.

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006).

In rejecting claims under 35 U.S.C. § 102, “[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation.” *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1375-76 (Fed. Cir. 2005) (citation omitted).

With respect to independent claim 1, Appellants argue that Harish cannot anticipate or render obvious independent claim 1 because Harish neither discloses nor suggests the invention as recited in independent claim 1. Specifically, Appellants argue that nothing in the relied upon text of Harish discloses the specific interrelationship of the claimed elements as recited in independent claim 1. (App. Br. 8-10).

From our review of the teachings of Harish in light of the claimed invention, we similarly have difficulty in understanding the Examiner's correlation of the specific elements in figure 1 of Harish to the corresponding claim limitations. The Examiner maintains:

an agent (Fig 1, 102) coupled to a host (fig 1,100), the agent having volatile memory (fig 1, 106) for storing a first table, (abstract; col 2, lines 25-34; col 3, lines 5-27; RAM memory stores page table entries) the table having entries to map the virtual storage segments to the storage locations; (Abstract; col 2, lines 25-34; col 4, lines 37- 50;

page table entries in both RAM and ROM contain a mapping of virtual address to physical address)

and a controller (fig 1, 108) coupled to the agent (fig 1, 102), the controller having non-volatile memory (fig, 104) for storing a second table, (Abstract; col 2, lines 25-34; col 4, lines 37-50; ROM memory stores page table entries) the controller intermittently causing contents of the first table to be replaced by contents of the second table, (col 2, lines 10-19; col 4, lines 43-50; the ROM data is loaded into RAM when memory is modified)

whereby during an input/output (I/O) operation, the host accesses one of the entries in the first table to determine one of the storage locations (Fig 2; col 2, lines 20-34; the dynamic data as well as the page table entry is updated and a data page is also allocated).

(Answer 3-4). We agree with the Examiner's correlation of the elements but for the host 100. As correlated by the Examiner, the totality of all elements in Figure 1 comprise the claimed "host," yet the host is required to be coupled to the agent. We do not see how CPU 102 which is defined by the Examiner as the agent can be coupled to itself which is required to be within the host. The Examiner is using the totality of the elements in figure 1 of Harish as a separate and distinct claimed element. Here, we cannot agree with the Examiner's correlation of the elements taught by Harish to those recited in independent claim 1. Since the Examiner has not set forth a sufficient initial showing of anticipation whereby Harish teaches all the claimed limitations, we cannot sustain the rejection of independent claim 1 over Harish alone. Similarly, the Examiner has not set forth a *prima facie* case of anticipation and of dependent claims 2-6 over Harish alone.

With respect to independent claim 7, Appellants argue that nothing in the text applied by the Examiner discloses or suggests a plurality of variables indicating states of an entry in a first table or a second table and an

offset for the entry wherein the offset includes a logic unit number identifier and a block identifier as recited in independent claim 7.

From our review of the Examiner's stated rejection, we do not find that the Examiner has specifically addressed the limitations recited in independent claim 7. The Examiner generally opines that independent claim 7 is similar to independent claim 1 and does not further detail the merits of the rejection. While we agree with the Examiner that there are similarities in the claim limitations, we do not find that the Examiner has expressly addressed the merits of the differences as argued by Appellants. Furthermore, in light of the deficiencies noted with respect to independent claim 1, we do not find that the Examiner has set forth a proper initial showing of anticipation of independent claim 7 and dependent claims 8-11.

35 U.S.C. § 103(a)

Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'

KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1734 (2007).

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," *Id.* at 1739, and discussed circumstances in which a patent might be determined to be obvious. *KSR*, 127 S. Ct. at 1739 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966)). The Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to

known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

The Federal Circuit recently recognized that "[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not." *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (citing *KSR*, 127 S. Ct. 1727, 1739 (2007)). The Federal Circuit relied in part on the fact that Leapfrog had presented no evidence that the inclusion of a reader in the combined device was "uniquely challenging or difficult for one of ordinary skill in the art" or "represented an unobvious step over the prior art." *Id.* at 1162 (citing *KSR*, 127 S. Ct. at 1740-41).

With respect to independent claim 12, Appellants argue that the portions of Harish at columns 2 and 3, which were relied upon by the Examiner in the rejection, do not teach or suggest storing a record of the identified portions at a second table and not a first table in writing to a second storage location whereby the writing operation occurs at portions of the second storage location associated with the identified portions as recited in independent claim 12. From our review of the cited portions of Harish, we do not find that the Examiner has set forth a sufficient initial showing of obviousness of the claimed invention. The Examiner merely cites the same portions of the reference with respect to each of the recited limitations in the

claim without specifically identifying how the teachings of the reference teach or fairly suggest the invention as recited in independent claim 12.

While the teachings of Harish relate to moving information from a ROM to a RAM, we cannot agree with the Examiner that Harish teaches using a first table and a second table as recited in the language of independent claim 12. The Examiner's response to Appellants' arguments with respect to independent claim 12 is that the Examiner has twice rejected the claims in a non-final and a final action. The Examiner maintains that the Examiner has twice explained the positions and presented a detailed mapping of the prior art to the claimed subject matter. (Answer 9).

From our review of the non-final and final rejections identified by the Examiner, we find that the Examiner merely repeats the same generalized statements with no specific explanation or correlation of claimed elements to specific portions of the reference. Therefore, we are left to speculate as to how the prior art meets the recited claim limitations. We do not find that the Examiner's showing sets forth a sufficient initial showing of obviousness of the claimed invention. Therefore, we do not find that the Examiner has set forth a *prima facie* case of obviousness of independent claim 12 and dependent claims 13-16 based upon the combination of Harish and Kuznetsov.

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CONCLUSION

To summarize, we have reversed the rejection of claims 1-11 under 35 U.S.C. § 102(b) and we have reversed the rejection of claims 12-16 under 35 U.S.C. § 103(a).

REVERSED

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